AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A multilayered air-fuel ratio sensor having a plurality of stacked layers comprising:

a plurality of substrate layers comprising at least one solid electrolytic substrate layer and at least one insulating substrate layer; and

a boundary layer interposed between said solid electrolytic substrate layer and said insulating substrate layer;

wherein said boundary layer has an average sintered particle size that is larger than that of said solid electrolytic substrate layer and that is larger than that of said insulating substrate layer.

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2. (previously presented) The multilayered air-fuel ratio sensor according to claim 1, wherein said boundary layer has a porosity larger than that of said substrate layers.

Claim 3. (canceled)

4. (previously presented) The multilayered air-fuel ratio sensor according to claim 1, wherein said boundary layer comprises a component selected from the group consisting of alumina, spinel, and steatite.

Claim 5. (canceled)

6. (previously presented) The multilayered air-fuel ratio sensor according to claim 1, wherein said boundary layer has a thickness in a range of 10 to 100 μm.

7. (previously presented) The multilayered air-fuel ratio sensor according to claim 1, wherein said substrate layers comprise a plurality of solid electrolytic substrate layers, and said boundary layer is interposed immediately between two consecutive solid electrolytic substrate layers without any other intervening layer.

Claims 8-9. (canceled)

10. (previously presented) The multilayered air-fuel ratio sensor according to claim 1, wherein the composition of said boundary layer is different from the composition of said solid electrolytic substrate layer.

11. (previously presented) The multilayered air-fuel ratio sensor according to claim 10, wherein the composition of said boundary layer is different from the composition of said insulating substrate layer.

Claims 12-17. (canceled)

18. (previously presented) A multilayered air-fuel ratio sensor having a plurality of stacked layers comprising:

a plurality of substrate layers comprising at least one solid electrolytic substrate layer and at least one insulating substrate layer; and

a boundary layer interposed between said solid electrolytic substrate layer and said insulating substrate layer;

wherein said boundary layer has an average sintered particle size that is larger than that of said solid electrolytic substrate layer and that is larger than that of said insulating substrate layer and wherein the composition of said boundary layer is different from the composition of said solid electrolytic substrate layer.

19. (previously presented) The multilayered air-fuel ratio sensor according to claim 18, wherein said boundary layer has a porosity that is larger than that of said substrate layers.

20. (previously presented) The multilayered air-fuel ratio sensor according to claim 18, wherein said boundary layer comprises a component selected from the group consisting of alumina, spinel, and steatite.

21. (previously presented) The multilayered air-fuel ratio sensor according to claim 18, wherein said boundary layer has a thickness that is in the range of 10 to 100 μ.

22.. (previously presented) The multilayered air-fuel ratio sensor according to claim 18, wherein said substrate layers comprise a plurality of solid electrolytic substrate layers, and said boundary layer is interposed immediately between two consecutive solid electrolytic substrate layers without any other intervening layer.

Claim 23. (canceled)

24. (new) The multilayered air-fuel ratio sensor according to claim 4, wherein said boundary layer is made primarily from α-alumina with an average centering particle diameter of 3 to 4 μm.

25. (new) The multilayered air-fuel ratio sensor according to claim 4, wherein said at least one solid electrolytic substrate layer is made of yttria partially-stabilized zirconia with an average centering particle diameter of 2 to 3 μm.

26. (new) The multilayered air-fuel ratio sensor according to claim 4, wherein said insulating substrate layer is formed from a component selected from the group consisting of alumina, spinel and steatite.

27. (new) The multilayered air-fuel ratio sensor according to claim 20, wherein said boundary layer is made primarily from α-alumina with an average centering particle diameter of 3 to 4 μm.

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28. (new) The multilayered air-fuel ratio sensor according to claim 20, wherein said at least one solid electrolytic substrate layer is made of yttria partially-stabilized zirconia with an average centering particle diameter of 2 to 3 μm.

29. (new) The multilayered air-fuel ratio sensor according to claim 2-, wherein said insulating substrate layer is formed from a component selected from the group consisting of alumina, spinel and steatite.